December 2018 RCRA Semiannual Monitoring & Residential Well Sampling Event

February 2019

Prepared for:

Central Wire – Union Plant
6509 Olson Rd.
Union, IL 60180-0423

Prepared by:

Autumnwood ESH Consultants, LLC
Mount Pleasant, WI 53403

December 2018 RCRA Semiannual Monitoring & Residential Well Sampling Event

Central Wire, Inc. (CWI) Union Illinois plant is working under an Administrative Order on Consent with U.S. EPA to control and clean up a chlorinated plume created by the on site disposal of chlorinated solvents in the 1960s and 1970s.

As part of the order CWI samples a RCRA network of on and off site groundwater monitoring wells and nearby residential wells on a semiannual basis, in the summer and the winter.

CWI is located near Union, Illinois as shown on Figure 1. The locations of the monitoring wells and the residential wells are provided on Figure 2. Table 1 provides a crosswalk between the addresses which are the Sample Identification in the laboratory analytical report in Attachment 2 and the names identified on Figure 2.

Table 1

Residential Wells Routinely Sampled as a Part of the Central Wire Union, IL RCRA CMI Semiannual Groundwater Monitoring Well and Residential Well Sampling Event

Residence	Address
Ex. 7(F)	

The 2018 winter semiannual RCRA CMI groundwater and residential well sampling event was conducted on December 12 and 13, 2018. The samples arrived at the lab on December 14, 2018 at 0.3° C.

The current status of the well data vis-à-vis the EPA MCLs is shown in Table 2. The results / trends are summarized below. The historical data and plots of the data are provided in Attachment 1 in Figures 1 through 12. The laboratory reports for this sampling event are in Attachment 2. The well stabilization field data is included in Attachment 3.

MW (Monitoring Well) 2 – No MCLs have been exceeded since December 2007, see Figure 1.

MW-4 – The PCE MCL (5 μg/L) has been exceeded since monitoring began in 1995 and since 2010 has trended downward from 70 μg/L in December 2010 to 30 μg/L in December 2018, see Figure 2.

MW-5 - The PCE MCL has been exceeded since monitoring began in 1995 and has trended downward from 210 μg/L in December 2003 to the 100s in the 2000s and has been less than 100 μg/L since June 2013 and was found at 66 μg/L in December 2018, see Figure 3. TCE, TCA and DCE MCLs were last exceeded in the 2002 – 2005 time frame.

MW-5D – TCE values increased rapidly from 1995 to June 2003 (0 to 63 μg/L) and has generally trended downward since then with eleven of the twelve latest readings ranging from 13 to 19 μg/L, see Figure 4. PCE has been below the MCL of 5 μg/L since December 2005.

MW-6 - Has only exceeded the PCE MCL and has been at or slightly below the MCL of 5 μg/L since June 2013 and was found at 4 μg/L in December 2018, see Figure 5.

MW-7- Regularly exceeds the MCL for PCE and has been trending lower since it reached 200 μg/L in December 2006 (the December 2018 result was 48 μg/L), see Figure 6. PCE has been less than 100 μg/L since October 2008. The DCE MCL was exceeded in March and December 2009, but other than those two isolated occurrences, has been found at levels below the MCL since December 2003. The TCE MCL was last exceeded in December 2012.

MW-8 - Has regularly exceeded the PCE and TCE MCLs since testing began in 1995, see Figure 7. PCE has come down from 200 μg/L in 2008 to a range of 56 to 73 μg/L since December 2011. TCE levels have come down from a high of 34 μg/L in June 1995 to the June 2015 value of 6.7 μg/L. It was found at 8.2 μg/l in December 2018. TCE has been found at 10 μg/L or less in seven of the last eight semiannual samples.

MW-9 - Has not exceeded any MCL since April 2002 when it exceeded the PCE MCL with a value of 12 μg/L, see Figure 8. There have only been seven detections since then, all concentrations under 1.5 μg/L.

MW-HBR – This monitoring well only exceeds the MCL for PCE which it has done since monitoring began in 1995. However, it has generally trended downward from a high of 130 μg/L in 2003 to the current value of 36 μg/L indicating a relatively stable value since June 2013, see Figure 9. The duplicate sample was collected here and matched the values found in this sample.

DGW-1 is a three well nest – shallow (S), Intermediate (I) and Deep (D).

No MCLs have been exceeded in **DGW-1S** except TCE at slightly above the MCL at 5.6 μg/L in June 2016, see Figure 10.

DGW-1I has exceeded MCLs for DCE, TCE, PCE, TCA and 1,2-Dichloroethane (DCA), see Figure 11. The PCE MCL has not been exceeded since 2002. The DCA MCL has not been exceeded since 2005. The TCA has been above the MCL 22 of the past 24 samples.

DCE and TCE were found in December 2018 at 33 and 120 μg/L, respectively. TCA, DCE and TCE all increased over the June 2018 sampling event.

DGW-1D has exceeded MCLs for DCA, DCE, TCE and Vinyl Chloride (VC), see Figure 12. No MCLs have been exceeded in the last three sampling event (December 2017 through December 2018). The Vinyl Chloride (VC) MCL had been exceeded in six of the last twelve sampling events, but not in the last three sampling events. It was at less than the Method Detection Limit of 018 μg/L in December 2018. MCLs for 1,2-DCA have only been exceeded once since June (6.2 μg/L vs the MCL of 5 μg/L) in December 2012. TCE has been below the MCL since December 2015. 1,1-DCE has generally trended lower since the high of 98.4 μg/L was recorded in December 2005 and was below the MCL of 7 μg/L in the past three sampling events.

DGW-2 is also a three well nest (shallow, intermediate and deep) that has been sampled since 2012. There have been no detections in these three wells. Between 2012 and 2016. However, 1,1,1-TCA (at 1.2 μg/L) and TCE (at 0.5 μg/L), both below their respective MCLs of 200 and 5 μg/L, were detected in DGW-2D in June 2016. These were the first detections and not believed to be from DGW-2D, but rather a lab error or a sample labelling or collection error. CWI believes this because there had previously been no detections in all three of these wells, so CWI immediately resampled DGW-2D on 7/21/2016 and there were no detections.

The same kind of incident occurred in December 2018.

Values found are shown in the table below are in μg/L.

Detections	DGW-2S	DGW-2S	DGW-2S
1,1,1-TCA	1.3	2.3	4.5
TCE	0.96 J	1.7	2.6
cis-1,2-DCE			0.28 J

As a result of the history of no detections at this down gradient location (approximately 1,370 feet downgradient from the Ex. 7(F) well where there have been no chemicals of concern detected), the CWI sampler was directed to resample this location. Resampling was done on 1/3/2019 using new tubing for each sample (DGW-2S, DGW-2I and DGW-2D). Heretofore, the sampling tubes were decontaminated between samples and there was no impact. The resampled analytical results show no detections. The analytical report for this resampling is provided in Attachment 2 as *ATT 2 - 12-2018 Resample DGW-2.*

Six residential wells were sampled in the December 2018 semiannual RCRA sampling event. Ex. 7(F) well was sampled on November 5, 2018 and the

well was deactivated and therefore not available to sample in mid December. There were no detections of any VOCs by EPA Method 8260C, including all the chemicals of concern at Central Wire.

The summary table below lists the wells and their status vis-à-vis the MCL for the Chemicals of Concern.

Table 2
CURRENT STATUS OF RCRA GROUNDWATER MONITORING WELLS

Chemical / Well	TCE	PCE	TCA	DCE	VC
MW-2	OK	OK	OK	OK	OK
MW-4	~	**>MCL**	OK	OK	OK
MW-5	OK	**>MCL**	OK	OK	OK
MW-5D	**>MCL**	OK	OK	OK	OK
MW-6	OK	OK	OK	OK	OK
MW-7	OK	**>MCL**	OK	OK	OK
MW-8	**>MCL**	**>MCL**	OK	OK	OK
MW-9	OK	OK	OK	OK	OK
HBR	OK	**>MCL**	OK	OK	OK
DGW-1S	OK	OK	OK	OK	OK
DGW-1I	**>MCL**	OK	**>MCL**	**>MCL**	OK
DGW-1D	OK	OK	OK	**>MCL**	OK
DGW-2S	OK	OK	OK	OK	OK
DGW-2I	OK	OK	OK	OK	OK
DGW-2D	OK	OK	OK	OK	OK

~ = Some values above and below the MCL in the past 2 years/4 rounds of sampling
OK = No MCL exceedances in the past 2 years/4 rounds of sampling
>MCL = Consistent exceedances in the past 2+ years/4+ rounds of sampling

As can be seen in the table above, there are six (of fifteen) wells where samples have consistently been above the MCL for I – 3 chemicals of concern. The concentration of

chemicals of concern found in samples from the wells exceeding MCLs are generally trending downward very slowly.

Some wells labeled as “OK” may rebound as has happened in MW-4 where, in the last thirteen samples, four (including two in the past two years) have exceeded an MCL.

FIGURES

ATTACHMENT 1

TABULATED AND PLOTTED DATA FOR WELLSA

ATTACHMENT 2

ANALYTICAL DATA

ATTACHMENT 3

GROUNDWATER STABILIZATION DATA